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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,962	10/28/2003	Chang-Fu Kuo	BHT-3212-45	4572

7590 05/30/2007

TROXELL LAW OFFICE PLLC
SUITE 1404
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EXAMINER	
VUONG, QUOCHIEN B	
ART UNIT	**PAPER NUMBER**
2618	

MAIL DATE	DELIVERY MODE
05/30/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/693,962	KUO ET AL.	
	Examiner	Art Unit	
	Quochien B. Vuong	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 April 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *17-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *17,19,20,24-28,30,31 and 34-36* is/are rejected.

7)☒ Claim(s) *18,21-23,29,32 and 33* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 04/12/2007 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 17, 19, 20, 24-28, 30, 31, and 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Motalvo et al. (US 6,693,969) in view of Lieu (US 5,519,887).

Regarding claims 17 and 28, Montalvo et al. disclose a phase lock loop (figure 1) for receiving a baseband signal having an input frequency and modulating the baseband signal to be a corresponding RF signal for transmitting and the method for generating RF signal by utilizing the phase lock loop, the phase lock loop comprising: a frequency synthesizer (40) for generating a local oscillating signal having a local

oscillating frequency; a first divider (92) for dividing the frequency of the local oscillating signal by a first programmable divisor to generate a reference signal; a modulator (24) for modulating the frequency of the reference signal according to the baseband signal to generate a corresponding first comparison signal; a phase detector (32) for detecting phases of the first comparison signal and a second comparison signal, and outputting a corresponding current-controlled I/O signal in responsive to the phase difference of two comparison signals; a loop filter (34) for filtering the control current to output a control voltage; an oscillating signal generator (28) for generating the corresponding RF signal for transmitting according to the control voltage, the RF signal being fed back as a feedback signal; and a frequency converter (84) for receiving the feedback signal and the local oscillating signal to output the second comparison signal to the phase detector in responsive to the frequency difference of the feedback signal and the local oscillating signal (column 2, line 58 – column 5, line 40). Montalvo et al. do not specifically disclose a charging pump for receiving the current-controlled I/O signal and accordingly outputting a corresponding control current and wherein the first divisor of the first divider as well as the corresponding local oscillating frequency of the local oscillating signal are capable of being programmable-controlled if a carrier frequency of the RF signal substantially equals to a predetermined value. However, Lieu (figure 4) discloses a phase lock loop to comprise a charging pump (408) between the phase detector and loop filter and a first programmable divisor of a first programmable divider as well as the corresponding local oscillating frequency of the local oscillating signal are capable of being programmable-controlled if a carrier frequency of the RF signal substantially

equals to a predetermined value (column 2, line 50-55; and column 6, line 4 – column 8, line 29). Therefore, it would have been obvious for one having ordinary skill in the art at the time the invention was made to adapt the charging pump and the programmable-controlled first programmable divisor and the corresponding local oscillating frequency of the local oscillating signal of Lieu to the phase lock loop of Montalvo et al. for generating charge/discharge control signal to the loop filter and providing accurate, stable and digitally programmable frequency output.

Regarding claims 19, 20, 30 and 31, Montalvo et al. and Lieu disclose the phase lock loop and method of claims 17 and 28 above; in addition, Montalvo et al. disclose a plurality of other frequency dividers (figure 1, items 82 and 90). Therefore, it would have been obvious to put one of other frequency dividers as a second programmable divider for dividing the local oscillating signal before entering the frequency converter as an alternative circuit configuration with the same result.

Regarding claims 24 and 34, Montalvo et al. and Lieu disclose the phase lock loop and method of claims 17 and 28 above; in addition, Montalvo et al. disclose wherein the phase lock loop is utilized in a RF signal transmission device of a wireless communication system (column 1, lines 14-25).

Regarding claims 25 and 35, Montalvo et al. and Lieu disclose the phase lock loop and method of claims 17 and 28; in addition, Montalvo et al. disclose wherein the phase lock loop merely comprises the only frequency synthesizer (40) to generate the single local oscillating frequency of the local oscillating signal (figure 1).

Regarding claims 26 and 27, Montalvo discloses wherein the oscillating signal generator comprises a voltage-controlled oscillator (figure 1, VCO 28), and a third frequency divider (90) coupled to an output of the VCO.

Regarding claim 36, Montalvo et al. and Lieu disclose the method of claim 9 above; in addition, Montalvo et al. disclose wherein at least one filter (97) is employed to filter the signals in the phase lock loop (column 5, lines 22-33).

Allowable Subject Matter

4. Claims 18, 21-23, 29, 32 and 33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 18, 21-23, 29, 32 and 33 are objected to with the same reasons set forth in the previous Office action mailed 11/14/2006.

Response to Arguments

5. Applicant's arguments filed 04/12/2007 have been fully considered but they are not persuasive.

Regarding claim 17, applicant argues that Lieu does not disclose "a first programmable divisor of a first programmable divider as well as the corresponding local oscillating frequency of the local oscillating signal are capable of being programmable-controlled **if a carrier frequency of the RF signal substantially equals to a predetermined value**". The examiner, however, does not agree with the Applicant. Lieu

(column 2, line 50-55; column 6, line 4 – column 8, line 29; and column 7, lines 12-16) does disclose the first programmable divider as well as the corresponding local oscillating frequency of the local oscillating signal are always capable of being programmable-controlled (as admitted by the Applicant, see Applicant's remarks, page 8, the last paragraph) which including a case "when (or if) a carrier frequency of the RF signal substantially equals to a predetermined value". Since the claim does not recite "only if ....", the cited portion of Lieu reads on the claimed invention.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quochien B. Vuong whose telephone number is (571) 272-7902. The examiner can normally be reached on M-F 9:30-18:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on (571) 272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

QUOCHIEN B. VUONG
PRIMARY EXAMINER

Quochien B. Vuong
May 28, 2007.